Celsus, *De Medicina*, Book 7 (secs. Prologue; 7.1-7.7.3; 7.5)  
trans. By W.G. Spencer (1938)

7.Prologue.1
The third part of the Art of Medicine is that which cures by the hand, as I have already said, and indeed it is common knowledge. It does not omit medicaments and regulated diets, but does most by hand. The effects of this treatment are more obvious than any other kind; inasmuch as in diseases since luck helps much, and the same things are often salutary, often of no use at all, it may be doubted whether recovery has been due to medicine or a sound body or good luck.

7.Prologue.2
Besides, in cases where we depend chiefly upon medicaments, although an improvement is clear enough, yet it is often clear that recovery is sought in vain with them and gained without them: this can be seen for instance in treating the eyes, which after being worried by doctors for a long time sometimes get well without them. But in that part of medicine which cures by hand, it is obvious that all improvement comes chiefly from this, even if it be assisted somewhat in other ways. This branch, although very ancient, was more practised by Hippocrates, the father of all medical art, than by his forerunners.

7.Prologue.3
Later it was separated from the rest of medicine, and began to have its own professors; in Egypt it grew especially by the influence of Philoxenus, who wrote a careful and comprehensive work on it in several volumes. Gorgias also and Sostratus and Heron and the two Apollonii and Ammonius, the Alexandrians, and many other celebrated men, each found out something. In Rome also there have been professors of no mean standing, especially the late Tryphon the father and Euelpistus, and Meges, the most learned of them all, as can be understood from his writings; these have made certain changes for the better, and added considerably to this branch of learning.

7.Prologue.4
Now a surgeon should be youthful or at any rate nearer youth than age; with a strong and steady hand which never trembles, and ready to use the left hand as well as the right; with vision sharp and clear, and spirit undaunted; filled with pity, so that he wishes to cure his patient, yet is not moved by his cries, to go too fast, or cut less than is necessary; but he does everything just as if the cries of pain cause him no emotion.

7.Prologue.5
But it can be asked what is the proper province of this part of my work because surgeons claim for themselves the treatment of wounds as well, and of many of the ulcerations which I have described elsewhere. I for my part deem one and the same man able to undertake all of these; and when divisions are made, I praise him who has undertaken the most. I have myself kept for this part cases in which the practitioner does not find wounds but makes them, and in which I believe wounds and ulcerations to be benefited more by surgery than by medicine; as well as all that
which concerns the bones. These cases I shall proceed to discuss in turn, and leaving to another volume the subject of bones I shall deal with the rest in this one; beginning with cases which occur anywhere in the body I shall pass on to those which occur in special situations.

7.1.1 First then the displacements, in whatever part of the body they are, ought to be immediately treated, so that the skin is several times incised with a sharp scalpel where the pain is, and the blood as it issues wiped off with the back of the knife. But if relief is rather slow in coming and there is now redness as well, and if, where the redness is, there is swelling in addition, wherever there is swelling this treatment is best. Repressants are then to be applied, in particular unscoured wool soaked in vinegar and oil. In a slighter case the same applications may afford relief even without the scalpel; and if there is nothing else at hand, wood-ash, preferably of vine twigs, or failing that any other kind, stirred to a paste in vinegar, or even in water.

7.2.1 There is prompt relief in such cases; but there is more trouble where a lesion has arisen internally of itself which causes swellings and tends to suppuration. I have described elsewhere the various classes of abscession, and I have pointed out the suitable medicaments; it now remains to speak of those which should be treated by surgery. Before the abscession becomes hardened, the overlying skin should be scarified and a cup put on, in order to draw outwards whatever bad and corrupted matter has collected; and it is right to repeat this every third day until every indication of inflammation has gone.

7.2.2 It may be, however, that the cupping has no effect; for at times, although seldom, it happens that the abscess is enclosed in a covering of its own, which the ancients named a coat. Meges, because every such coat is sinew-like, said that no sinew could be produced under a lesion by which flesh is eaten away; but that when pus has been there for a long time, a callus forms round it. This has no bearing upon the mode of treatment, for the same thing ought to be done, whether it be a coat, or a callus. There is nothing to prevent a callus being called a coat, since it covers.

7.2.3 Moreover at times the coat has formed after the pus has become more matured; so that what is under it cannot be drawn out by cupping. But this is readily recognized when the application of a cup causes no change. Therefore when that happens, or there is already hardening, there is no help from cupping, but as I have said elsewhere it is whilst matter is collecting that it has to be diverted or dispersed, or else matured. In the two former contingencies no further treatment is needed. When pus has matured, if in the armpits or groins it will not often have to be cut into. The same is true when the abscess is of moderate extent, so also when it is in the skin, or even in the flesh, unless the patient's weakness forces us to hurry; it is sufficient to poultice in order to make the pus come out of its own accord.
7.2.4 For the place which has not felt the knife may generally escape without a scar. But if the abscess is more deeply seated, we must consider whether the part has sinews or not. For if it is free from sinews, it should be laid open with a red-hot cautery-knife; which has this advantage, that a small wound continues open longer for the withdrawal of the pus, and the resulting scar is small. But if there are sinews near by, the cautery is unsuitable, lest spasm of the sinews ensues or paralysis of the limb; then the scalpel becomes necessary. But although abscesses elsewhere can be opened even whilst immature, where there are sinews, we must wait for them to be fully matured, since the skin then becomes thin, and the pus joins it, and so is nearer to get at.

7.2.5 Most abscesses require a linear incision; but in that termed panus, because it generally thins out the skin extremely, all the skin overlying the pus is to be cut away. But when the scalpel is used, care should always be taken that the incisions made are as few and as small as possible, but enough in number and extent to afford the necessary relief. For the larger cavities may at times have to be cut into rather widely even by two or three incisions, and cuts must be so made that the deepest part of the cavity gets a vent, lest any fluid should be left there to eat its way gradually into adjoining tissue, which was previously sound.

7.2.6 Also it is natural that the skin should have to be cut away rather widely. For when the whole bodily habit has become vitiated in the course of a prolonged disease and the abscess cavity has extended widely and the skin over it has already become pallid, then we can recognize that the skin is already dead and of no further use; and therefore the excision of overlying skin is better, especially if the suppuration is round about the larger joints, and if the patient, confined to bed, has been exhausted by diarrhoea, and gained nothing from his food. But the skin should be so cut out as to leave a myrtle leaf shaped wound, in order that it may heal more readily: and this should be the constant rule, whenever, or for whatever reason, the practitioner cuts out skin.

7.2.7 Where the pus has been let out, for the armpit or groin lint plugging is unsuitable, but a sponge squeezed out of wine must be put on. In other parts, if likewise a lint plug is unnecessary, a little honey will be infused into the cavity to clean it, then agglutinants put on: if lint plugs are needed, over them also should be placed sponges similarly squeezed out of wine. But it has been said elsewhere when plugging is, and is not requisite. In all other ways the same procedure is to be followed after an abscess has been opened by incision, which I have described for one which has ruptured under medicaments.

7.3.1 Now how the treatment is succeeding, how much is to be either hoped or feared, can be learnt straightaway from signs which on the whole are the same as have been mentioned already for wounds. Good signs are: ready sleep, easy breathing, no harassing thirst, no aversion to food; for any feverishness to pass off; and for the pus to be white and uniform, not foul. Bad signs are: wakefulness, laboured breathing, thirst, aversion to food, fever, the pus dark or like wine lees, and foul.
7.3.2 Again, bad signs in the course of the treatment are: haemorrhage, or if the margins become fleshy before the sinus has been filled up by flesh, and this flesh is insensitive and not firm. But the worst sign of all is a faint, whether during the dressing, or after it. Again there is some reason for anxiety when the illness suddenly subsides, and then suppuration breaks out; or if the illness persists after the pus has been let out. And one cause for anxiety is if the wound is insensible to corrosives. But while it is chance that makes the signs point now one way, now another, it is the practitioner's part to strive to bring about healing.

7.3.3 Therefore whenever it is dressed, the abscess cavity should be washed out, with wine mixed with rain water or with a decoction of lentils, when the discharge seems to need checking; with honey wine when cleaning is required; after which it is dressed as before. When the discharge appears to be checked, and the cavity clean, then is the time to help the growth of flesh, both by irrigating with equal parts of wine and honey, and by laying on a sponge soaked in wine and rose oil.

7.3.4 Although the growth of flesh is helped by these medicaments, this is better attained, as I have said elsewhere, by a careful regimen; this consists, after the cessation of the fever and a return of appetite, in an occasional bath, gentle rocking daily, food and drink suitable for making flesh. These prescriptions all apply to abscesses which have burst under medicaments; but they have been held over to this place because it is scarcely possible to cure a large abscess without using the knife.

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7.5.1.a Missiles too, which have entered the body and become fixed within, are often very troublesome to extract. And some of the difficulties arise from their shape, some owing to the positions to which they have penetrated. Whatever the missile may be, it is extracted, either by the wound of entry, or through the spot towards which it is pointing. In the former case, the missile has already made a way for its withdrawal; in the latter the way out is made with the scalpel; for the flesh is cut through upon its point. But if the missile is not deeply seated, and lies in superficial tissue, or if it is certain that it has not crossed the line of large blood vessels or sinews, there is nothing better than to pull it out by the way it entered.

7.5.1.b But if the distance it has to be withdrawn is greater than that which remains to be forced through, or if it has crossed the line of blood vessels and sinews, it is more convenient to lay open the rest of its course and so draw it out. For it will be more easily got at and more safely pulled out. And in the case of one of the larger limbs, if the point has passed beyond the middle, a through and through wound heals more easily because it can be dressed with a medicament at both ends.
7.5.1.c But if the missile is to be drawn back, the wound should be enlarged with a scalpel, for then the missile comes away more easily, also less inflammation is caused; for this becomes more severe if the missile itself lacerates the tissues while being withdrawn. So also when a counter opening is made, this ought to be too wide for the missile to fill as it is passing out. In either case, the greatest care should be taken that no vein, nor one of the larger sinews, nor an artery, is cut. When any one of these is observed, it is to be caught by a blunt hook and held away from the scalpel. Than the incision has been made large enough, the missile is to be drawn out, proceeding in the same way, and taking the same care, lest that which is being extracted should injure one of those structures which I have said are to be protected.

7.5.2.a The foregoing are general rules; there are some rules which apply to special missiles, and these I will at once set out. Nothing penetrates so easy into the body as an arrow, and it also becomes very deeply fixed. And this happens both because it is propelled with great force and because it is sharply pointed. Hence it is more often to be extracted through a counter opening than through the wound of entry, and especially so because it is generally furnished with barbs which lacerate more when drawn backwards than if pushed through a counter opening.

7.5.2.b When a passage out has been laid open, the flesh ought to be stretched apart by an instrument like a Greek letter; next when the point has come into view, if the shaft is still attached, it is to be pushed on until the point can be seized from the counter opening and drawn out: if the shaft has already become detached, and only the arrowhead is within, the point should be seized by the fingers or by forceps, and so drawn out.

7.5.2.c Nor is the method of extraction different when it is preferred to withdraw the arrow by the wound of entry; the wound having been enlarged, either the shaft, if it is still attached, or, if not, the arrowhead itself, is pulled upon. When the barbs come into view, if they are short and fine, they should be nipped off on the spot by forceps, and the missile drawn out without them. If the barbs are too large and resistant for this, they must be covered by reed pens which have been split, and thus pulled out carefully so as not to tear the flesh. This is what is to be done in the case of arrows.

7.5.3.a But if it is a broad weapon which has been embedded, it is not expedient to extract it through a counter opening, lest we add a second large wound to one already large. It is therefore to be pulled out by the aid of some such instrument as that which the Greeks call the Dioclean cyathiscus, because invented by Diocles, whom I have said already to have been among the greatest of the ancient medical men.

7.5.3.b The instrument consists of two iron or even copper blades, bone blade has at each angle of its end a hook, turned downwards; the other blade has its sides turned up so that it forms a groove, also its end is turned up somewhat, and perforated by a hole. The latter blade is first
passed up to the weapon, and then underneath it, until the point is reached, the blade is then rotated somewhat until the point becomes engaged in the perforation. After the point has entered the perforation, the hooks of the first mentioned blade are fitted by the aid of the fingers over the upturned end of the blade already passed, after which simultaneously the cyathiscus and the weapon are withdrawn.

7.5.4.a There is a third kind of missile which at times has to be extracted such as a lead ball, or a pebble, or such like, which has penetrated the skin and become fixed within unbroken. In all such cases the wound should be laid open freely, and the retained object pulled out by forceps the way it entered. But some difficulty is added in the case of any injury in which a missile has become fixed in bone, or in a joint between the ends of two bones.

7.5.4b When in a bone, the missile is swayed until the place which grips the point yields, after which it is extracted by the hand, or by forceps; this is the method also used in extracting teeth. In this way the missile nearly always comes out, but if it resists, it can be dislodged by striking it with some instrument. The last resort when it cannot be pulled out, is to bore into the bone with a trepan close by the missile, and from that hole to cut away the bone in the shape of the letter V (upsilon), so that the lines of the letter which diverge to either side face the missile; after that it is necessarily loosened and easily removed.

7.5.4.c If the missile has forced its way actually into a joint between the ends of two bones, the limbs above and below are encircled by bandages or straps, by means of which they are pulled in opposite directions, so that the sinews are put on the stretch; the space between the ends of the bone is widened by these extensions, so that the missile is without difficulty withdrawn. In doing this care must be taken, as mentioned elsewhere, to avoid injury to a sinew, vein or artery while the weapon is being extracted by the same method which was described above.

7.5.5 But if the missile is also poisoned, after doing all the same things, even more promptly, if possible, in addition that treatment is to be applied which is given for one who has drunk poison, or has been bitten by a snake. The care of the wound itself after the extraction of the missile does not differ from that of a wound in which nothing has lodged and on which I have said enough elsewhere.